AIR QUALITY

In 1970, the nation passed the Clean Air Act in response to the growing recognition that our air was potentially unhealthy. The Clean Air Act quickly eliminated the most egregious sources of air pollution. In addition, the law put in place health-based standards to protect our right to breathe clean air. All across the country, improvement in air quality is regarded as one of the most important environmental achievements of the last quarter century.

In achieving this progress, EPA has traditionally employed a command-and-control approach, setting and enforcing strict standards for six common, high risk pollutants. Looking ahead, the strong enforcement that yielded these gains will continue. In the future, however, traditional methods will be supported by new, more flexible ways of doing business.

To begin, EPA will be expanding the roles of state and local governments, industry, environmental groups and other stakeholders in the standard setting and implementation processes. In addition, EPA will rely increasingly on innovative, market-based, economic incentive approaches to encourage more cost- effective and efficient compliance. EPA also anticipates that education and information transfer will be important tools, especially in helping to address problems posed by indoor air pollution.

CLEARING THE AIR: THE SUCCESS OF STRONG ENFORCEMENT

The Six Common Air Pollutants

Under the Clean Air Act, EPA established national standards for six common air pollutants. These common air pollutants, designated "criteria pollutants," are lead, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM10) and ground-level ozone, which causes smog. These six pollutants are found throughout the nation and can pose serious threats to human health, ecosystems, visibility, crops and buildings (see Air-1). Consequently, reducing these pollutants has been one of the primary focuses of air pollution programs.

Air-1

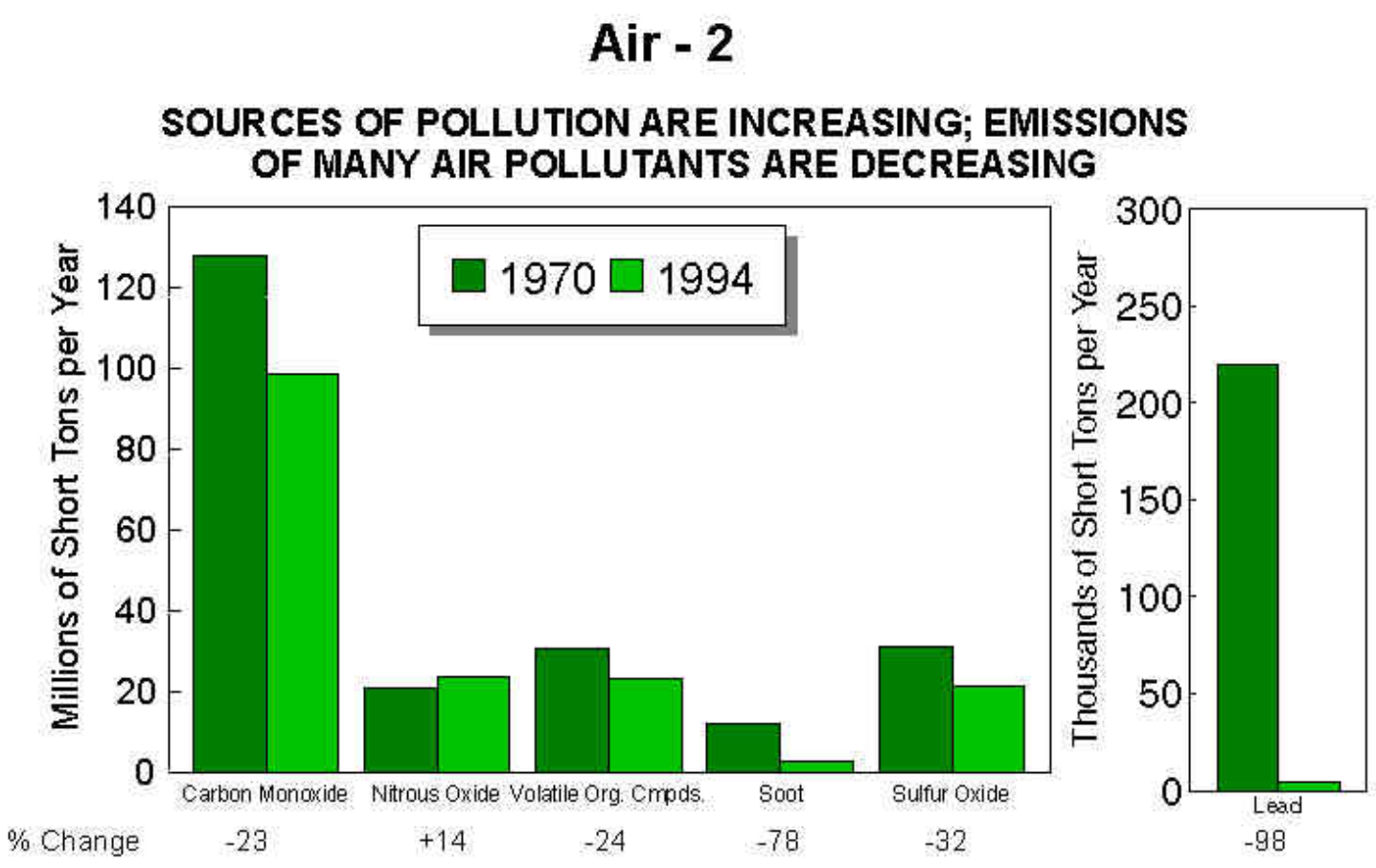
IMPACTS OF SIX COMMON POLLUTANTS

Pollutant	Major Impact	Change from 1970 to 1994
Lead	Infant Mortality, Reduced Birth Weight and Childhood IQ loss	- 98%

Ozone	Respiratory Illness and Lung Damage, Crop and Forest Damage, Buildings and Materials Damage and Visibility Problems	- 23%
Sulfur Dioxide	Respiratory Illness, especially in Asthmatics, Visibility Problems, and Precursor to Acid Rain	- 32%
Carbon Monoxide	Circulation Problems and Lung Damage	- 23%
Nitrogen Dioxide	Lung tissue Damage and Increased Respiratory Illness	+ 14%
Particulate Matter	Premature Deaths and Increased Lung Damage	- 78%

Community Clips *Cleaning the Winter Air in Southern Oregon*

Since 1970, total emissions for all six pollutants are down by 24 percent. The air program has realized great success with reductions in all pollutants except nitrogen oxides (see Air-2). Increased coal burning at power plants has increased nitrogen oxide emissions despite a decline in emissions from motor vehicles.

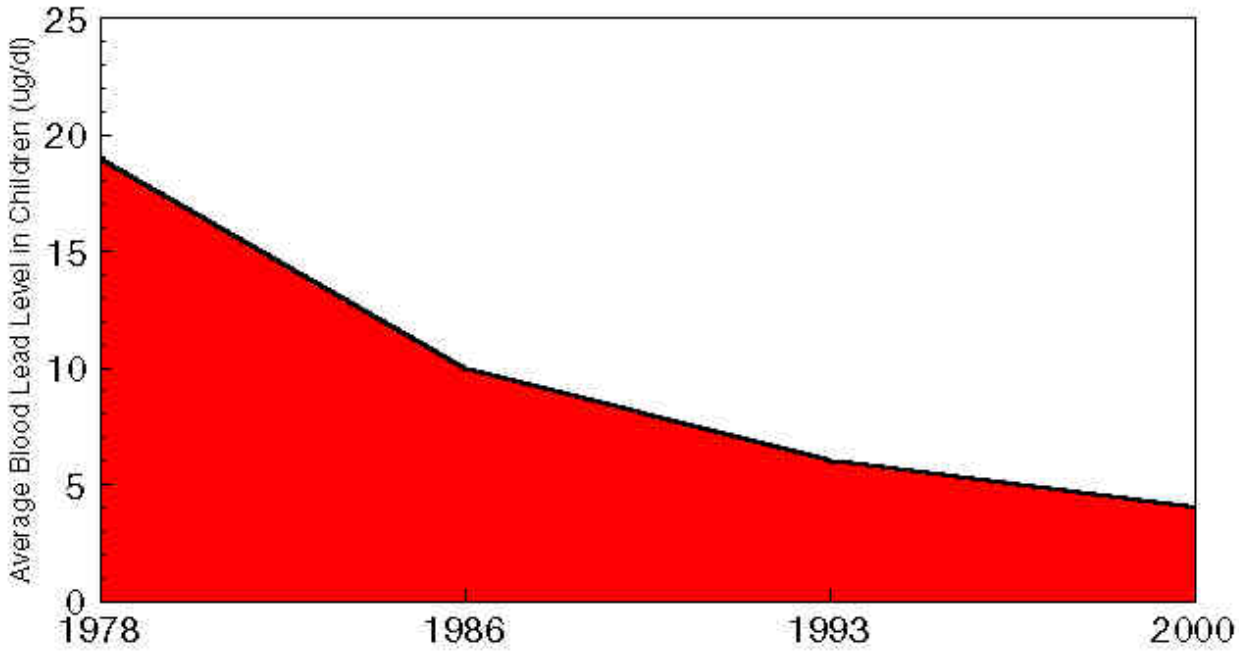


Source: *U.S. EPA, 1994 National Air Quality and Emissions Trends Report.*

The most significant reductions have occurred in emissions of lead, down by 98 percent. This success is due primarily to the EPA efforts to remove lead from gasoline and to place controls on specific industrial sources of lead. Significantly, blood lead levels in children have been reduced by nearly 75 percent since 1978 (see Air-3).

Air - 3

BLOOD LEAD LEVELS IN CHILDREN ARE DOWN BY 75 PERCENT



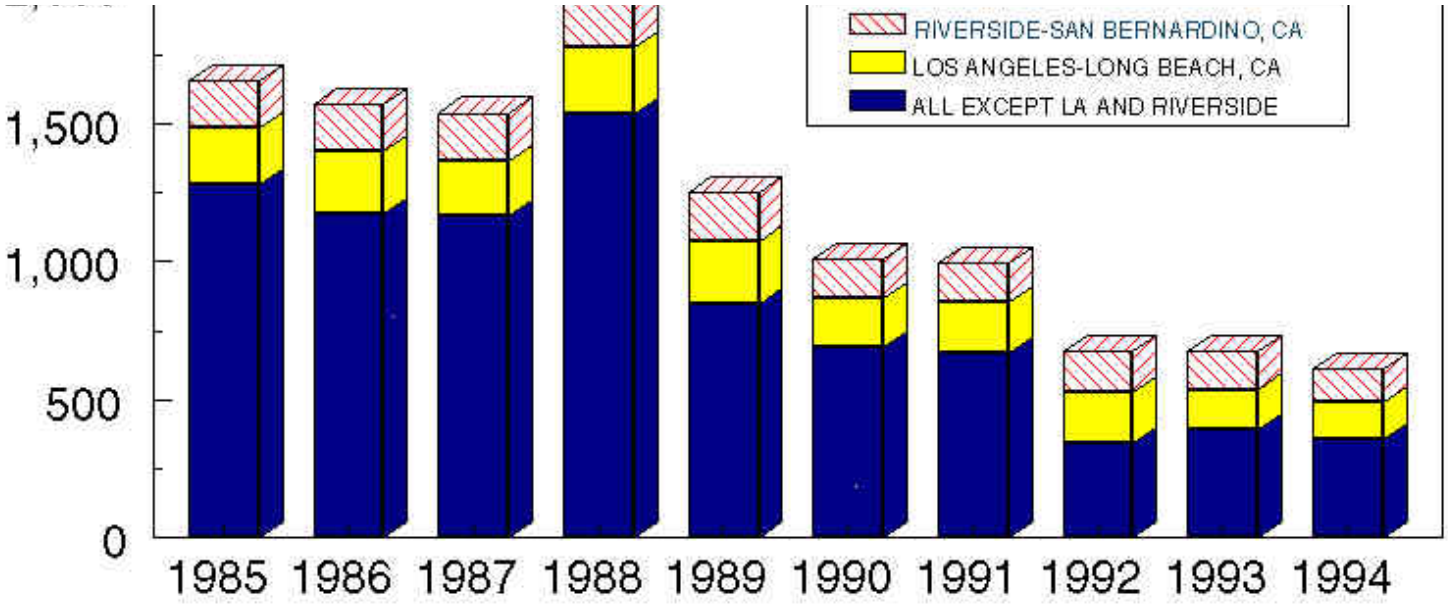
Source: *Center for Disease Control, 1993, as reported in Proposed Office of Water Environmental Indicators, December 1994.*

In addition to its success with regard to lead, the EPA actions over the past 25 years have resulted in a 70 to 80 percent reduction in emissions of other pollutants from a typical car. U.S. cars are running more efficiently as well as more cleanly. Cars are now 90 percent cleaner than in 1970. Over the same period, miles per gallon delivered by a typical car has almost doubled.

EPA measures air quality in major urban areas using the Pollution Standard Index (PSI). When the index exceeds 100, the air is considered unhealthy. The majority of PSI days greater than 100 are the result of carbon monoxide and ozone problems. From 1985 to 1994, there has been a downward trend in the number of PSI days greater than 100 in 90 major urban areas (see Air-4). Since Los Angeles and Riverside, California generally account for many of the unhealthy days, their indices are shown separately. During the same timeframe, in Los Angeles, the number of unhealthy PSI days has decreased by 35 percent. Riverside has experienced a 27 percent decline. For the remaining urban areas, PSI days exceeding 100 have fallen by more than 70 percent.

Air - 4

Total Number of PSI Days Greater than 100 in the 90 Largest Cities



Source: U.S. EPA 1994 National Air Quality and Emissions Trend Report

Community Clips

Progress in Addressing Ozone Pollution (Smog)

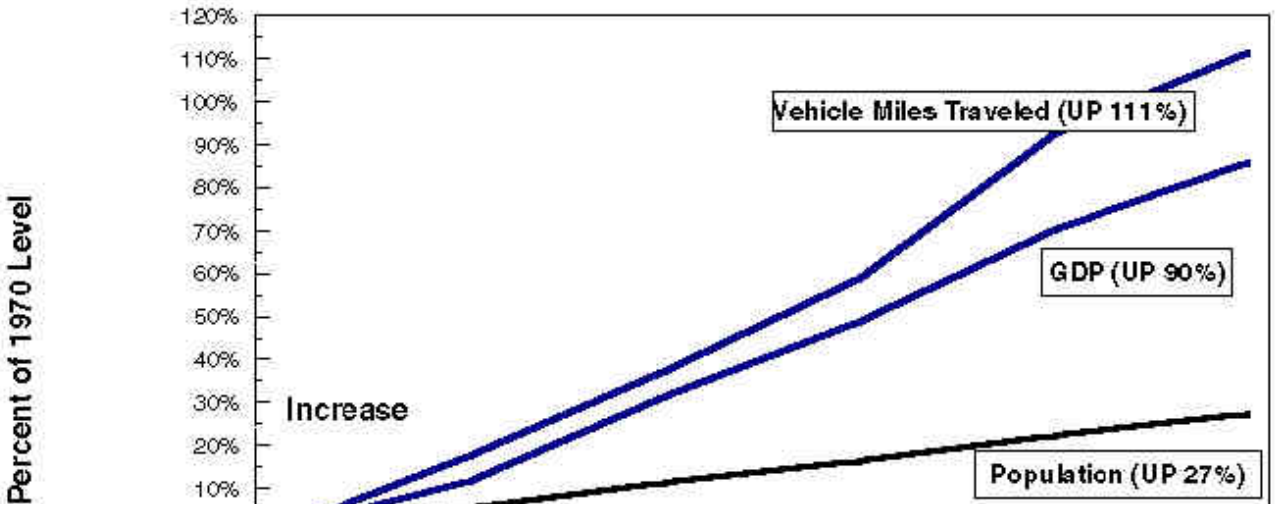
Since 1990, the number of metropolitan areas not meeting air quality standards has dropped from 199 cities to fewer than 70. Moreover, EPA Administrator Carol Browner recently reported that 50 million Americans are breathing far healthier air, freer from harmful levels of smog, than in 1990.

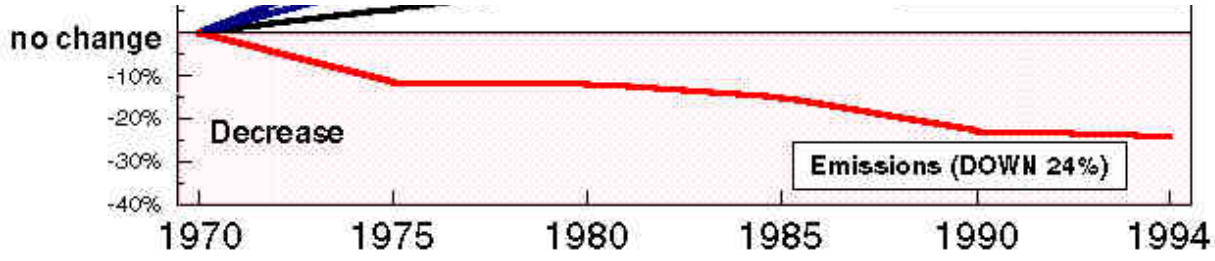
The success in reducing pollutant emissions is even more impressive when one realizes that from 1970 through 1994, the U.S. population increased by 27 percent, the domestic economy grew by 90 percent, and the number of motor vehicle miles driven increased by 111 percent (see Air-5).

EPA works in coordination with states, industry and public interest groups to reduce ozone pollution, in the form of cleaner cars, cleaner fuels, and more stringent controls on industrial pollution.

AIR - 5

Emissions Reductions/Economic and Population Growth





Vehicle Miles and Emissions data are from: "National Air Pollutant Emission Trends, 1900-1994," October 1995, EPA-454/R-95-011.
Gross Domestic Product and Population data are from: Statistical Abstract of the United States, 1995, U.S. Department of Commerce, Bureau of the Census.

Protecting the Ozone Layer

The ozone layer protects life on earth from exposure to harmful ultraviolet rays. A small number of industrial chemicals, however, are destroying the earth's stratospheric ozone. As the ozone layer is depleted, the levels of ultraviolet radiation reaching the planet's surface increase, creating significant health implications for all humans. The most immediate dangers include skin cancer, cataracts, and immune system impairment. Crop yields and ocean productivity may be also adversely impacted by ozone depletion.

Of the ozone-depleting chemicals, some of the most harmful are chlorofluorocarbons (CFCs), which are widely used as coolants in refrigerators and air conditioners. EPA directed the phaseout of CFC production as mandated by the Clean Air Act and in compliance with the international Montreal Protocol. By the end of 1995, CFC production for domestic use was eliminated in the U.S. most recently through a flexible, market-based approach where a limited number of permits to produce CFCs were allocated. If all nations abide by the agreement and it is fully implemented, the ozone layer should recover by the middle of the next century.

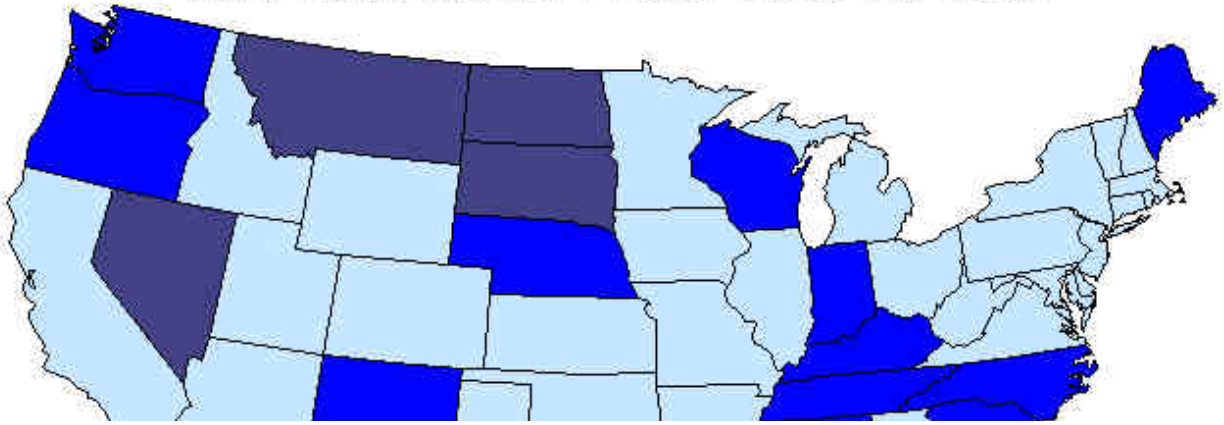
Air Toxics

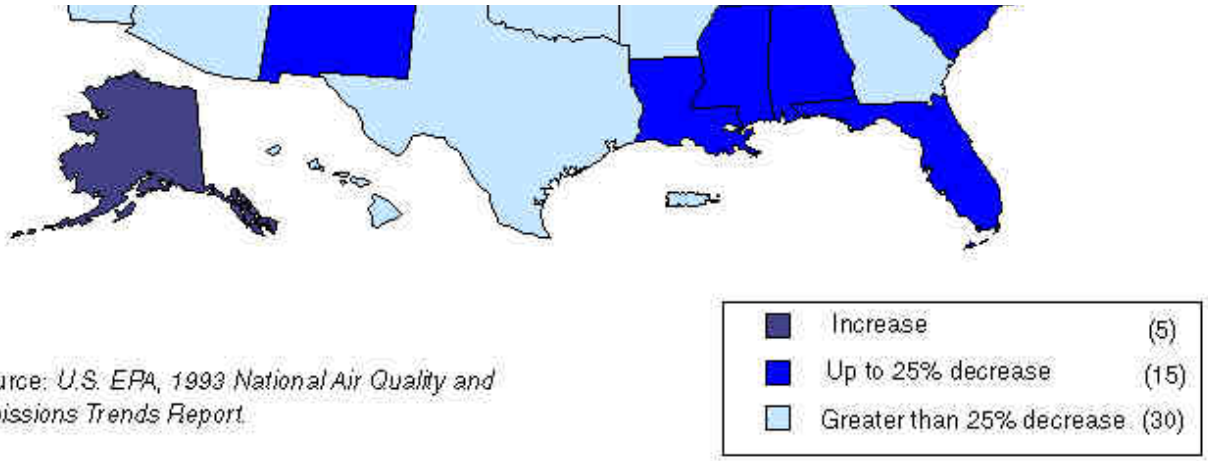
Under the Clean Air Act, EPA also sets national pollution emission standards for toxic air pollutants. Exposure to these hazardous compounds can result in severe damage to human health, including cancer and other chronic and acute illnesses. Many of these contaminants create significant risks when deposited on the land or in the water because they can accumulate to dangerous levels in humans and animals.

The volume of toxic air pollutants released to the air is decreasing. The EPA's Toxics Release Inventory, an annual accounting of toxics reaching the environment, shows that total emissions of hazardous air pollutants were reduced by 31 percent between 1988 and 1992 (see Air-6).

Air - 6

PERCENT CHANGE IN TOXIC AIR POLLUTANT AIR RELEASES FROM 1988 TO 1992





Source: *U.S. EPA, 1993 National Air Quality and Emissions Trends Report*

Community Clips *Improving Our Ability to Assess Risks*

In 1990 Congress directed the EPA to set, under a very ambitious time schedule, standards requiring maximum controls for 189 toxic compounds. As a result, the Agency has issued standards for hazardous air emissions from 18 industries. These standards reduce toxic air emissions by 900,000 tons annually.

Controlling Acid Rain

Acid rain is caused when sulfur dioxide and nitrogen oxides -- pollutants released primarily from the burning of coal, oil and other fossil fuels by electric utility power plants and automobiles -- chemically react with other substances in the atmosphere to form acidic compounds. When these acids are carried down from the atmosphere in rain, fog or snow, they can harm fish, damage high altitude forests and contribute to the deterioration of buildings and historical monuments. The pollutants that cause acid deposition have also been known to worsen asthma and other lung ailments and to impair visibility in many regions of the nation, including the scenic vistas of our national parks.

Community Clips *Cleaner Air in New England*

To reduce the harmful impacts of acid rain, the EPA is using an innovative, market-based approach to controlling sulfur dioxide (SO_2) emissions at electric utility power plants. The Clean Air Act permanently limits annual SO_2 emissions from electric power plants to half their 1980 levels resulting in a 10 million ton reduction. Among the innovative features of this program are the cap on total emissions, great compliance flexibility and heavy reliance upon economic incentives, not government proscription. Units affected by the program are free to choose how they meet their emission limits. For example, compliance options might include switching to cleaner fuels, installing pollution controls or reducing user demand for electricity. In addition, under the Acid Rain Program, companies that reduce their SO_2 emissions below their reduced emission limit can sell that extra emission reduction to other companies that wish to apply them to meeting their current or future emissions requirements. This market-based approach to reducing sulfur dioxide emissions will save utilities and their customers approximately $3 billion per year over the more traditional command and control approach. When fully implemented, this program will result in fewer acidic lakes and streams, reduced damage to buildings and monuments, measurable health benefits of between $12 and $40 billion per year and visibility improvements of $3.5 billion per year.

INDOOR AIR: PROGRESS THROUGH EDUCATION

Most people spend up to 90 percent of their time indoors, but many are not aware of the potential risk to their health posed by pollution inside their homes, schools, factories and offices. Common pollutants found in indoor environments include lead, radon (a naturally-occurring gas that is the country's second leading cause of lung cancer), household pesticides and solvents. Recent scientific evidence indicates indoor air can be more seriously polluted than outdoor air, even in large industrial cities. More importantly, those exposed to indoor air pollution are often the elderly, young and others most susceptible to ill effects.

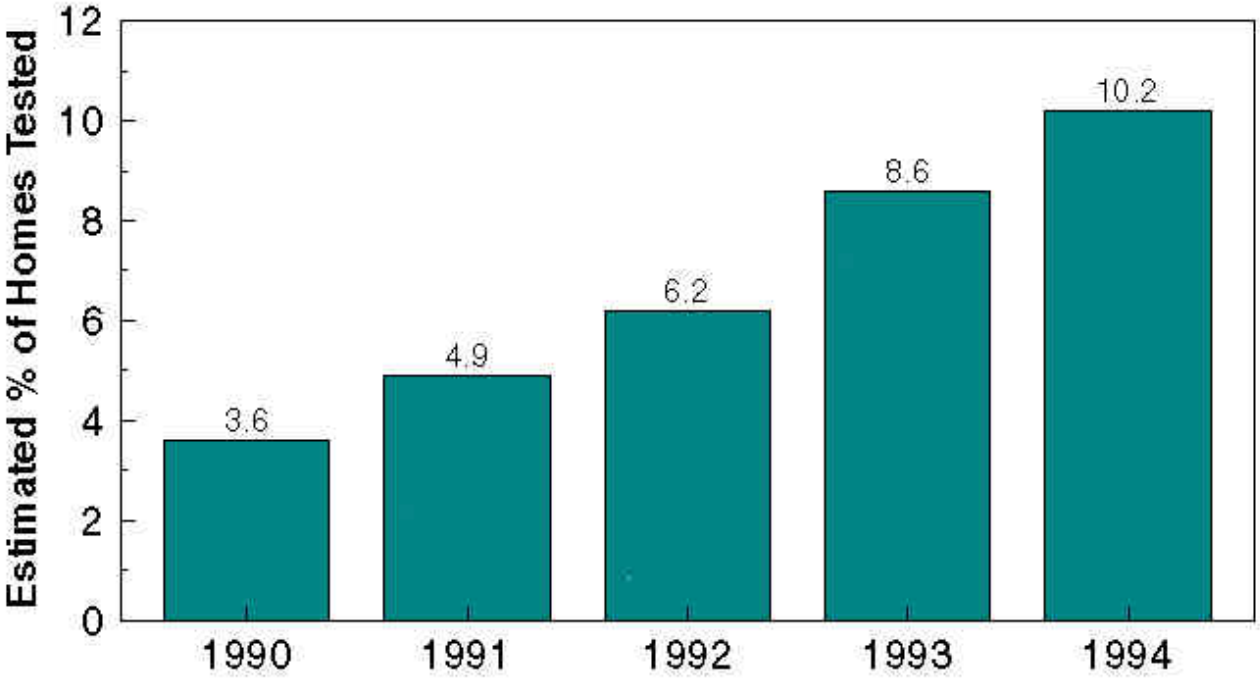
Fortunately, many indoor air quality problems can be easily managed using readily available technology. Through its efforts to reduce lead in dust from peeling paint and to educate the public about the risks posed by environmental tobacco smoke and radon, EPA is taking steps to reduce these risks.

Community Clips ***Attacking Indoor Lead Poisoning***

These efforts are beginning to show impressive results. Spurred on by EPA's radon education program, the percentage of U.S. households that have tested their homes for radon has increased significantly over the past five years (see Air-7). This number is likely to continue to grow as more states require that radon testing be part of any real estate transaction. In addition, more than 500,000 new homes have been built with radon-resistant features.

Air - 7

MORE HOMES ARE BEING TESTED FOR RADON



Source: *EPA Office of Air and Radiation, 1994.*

Community Clips ***Reducing the Risk of Radon***

AIR QUALITY CHALLENGES AHEAD

EPA and the states have made great strides in responding to threats to human health and the environment posed by air pollutants. Yet much work remains to be done. Sixty-two million Americans live in approximately 60 to 70 metropolitan areas that fail to meet air quality standards for one or more pollutants. As EPA turns to the future it will concentrate on many significant challenges, including:

Ground-Level Ozone: Ground-level ozone is a dangerous pollutant that commonly appears as smog. In 1994, approximately 93 million people lived in areas that did not meet the ozone standard. The EPA is currently reviewing the ozone standard as well as a related standard for particulate matter to ensure they protect human health. The EPA is also working to ensure that states have sufficient flexibility to manage their ozone problems and achieve the health-based standards.

Pollutants from Mobile Sources: Nitrogen oxides(NOx) are key contributors to acid rain, ground-level ozone, inhalable fine particles and particulate matter. A large proportion of this pollution comes from our automobiles -- our trips to the store and to work, as well as our cross-country travels. Technological advances in reducing vehicle pollution have helped reduce NOx from mobile sources. Unfortunately, our ever-increasing reliance on automobiles has made it difficult to effectively control NOx emissions. Americans today drive more than 2 trillion miles per year, more than twice the number in 1970. Consequently, over the last 25 years emissions of nitrogen oxides, unlike all other criteria pollutants, have increased.

EPA is working to reduce nitrogen oxide pollution. Part of this effort includes providing incentives to develop more energy efficient modes of travel, including cleaner cars, trucks, buses and gasoline.

Indoor Air Pollutants: Lead, radon, household pesticides and solvents are common indoor air pollutants that pose significant health risks. EPA will continue to investigate and employ non-regulatory approaches, especially education, so consumers take these risks more seriously and take actions to prevent unnecessary exposure.

Global Issues: EPA will need to address a number of global challenges that require cooperation with other U.S. agencies as well as with other countries. Continued diligence is required to further reduce chemicals that harm the ozone layer. Moreover, EPA will need to take steps to help control the production of carbon dioxide, a common gas that accummulates in the atmosphere and contribute to global warming. Carbon dioxide and other compounds are often referred to as "greenhouse gases" because they trap heat, causing the Earth to warm. Since 1972, worldwide levels of carbon dioxide have increased by eight percent, contributing to increases in global temperatures.

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